IN THE CLAIMS

Please amend the claims as follows:

1.   (Currently Amended) A computer-assisted method comprising:

accessing, using a computing device, stored volumetric (3D) imaging data of a subject;

representing at least a portion of the 3D imaging data on a two dimensional (2D) screen;

receiving user-input specifying a single location on the 2D screen;

computing an initial centerline path of the tubular structure;

obtaining segmented 3D tubular structure data by iteratively performing a segmentation that separates the 3D tubular structure data from other data in the 3D imaging data using the single location as an initial seed for performing the segmentation; and

iteratively correcting the initial centerline path using the segmented 3D tubular structure data while the segmentation is iteratively performed.

2.   (Original)   The method of claim 1, further comprising incrementally extracting from the 3D imaging data a central axis path of the tubular structure.

3.   (Original)   The method of claim 2, in which the performing the segmentation further comprises:

initializing a front at an origin that is located along the central axis path;

initializing a propagation speed of evolution of the front to a first value;

propagating the front by iteratively updating the front, the updating including recalculating the propagation speed;

comparing the propagation speed to a predetermined threshold value that is less than the first value;

if the propagation speed falls below the predetermined threshold value, then terminating the propagating of the front; and

classifying all points that the front has reached as pertaining to the tubular structure.

4.   (Original)   The method of claim 1, further comprising:

initializing at least one parameter of a segmentation algorithm;

iteratively performing the segmentation of 3D tubular structure data for separating the 3D tubular structure data from other data in the 3D imaging data, the iteratively performing the segmentation including iterating the segmentation algorithm; and

reinitializing the at least one parameter between iterations of the segmentation algorithm, the reinitializing including adjusting the at least one parameter to accommodate a local variation in data associated with the tubular structure.

5.   (Original)   The method of claim 1, further comprising:

computing a central vessel axis (CVA) of the segmented 3D tubular structure;

representing a 3D image of a region near the segmented 3D tubular on a two dimensional (2D) screen;

displaying on the screen a first lateral view of at least one portion of the segmented 3D tubular structure, the first lateral view obtained by performing curved planar reformation on the CVA of the segmented 3D tubular structure;

displaying on the screen a second lateral view of the at least one portion of the segmented 3D tubular structure, the second lateral view taken perpendicular to the first lateral view;

displaying on the screen cross sections, perpendicular to the CVA; and

wherein the 3D image, the first and second lateral views, and the cross sections are displayed in visual correspondence together on the screen.

6.   (Original)   The method of claim 1, further comprising masking data that is outside of the 3D tubular structure.

7.   (Original)   The method of claim 1, further comprising computing at least one estimated diameter of the segmented 3D tubular structure.

AMENDMENT AND RESPONSE UNDER 37 C.F.R § 1.111
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8.   (Original)   The method of claim 7, further comprising flagging at least one location of the segmented 3D tubular structure, the at least one location deemed to exhibit at least one of a stenosis or an aneurysm.

9.   (Original)   The method of claim 7, further comprising displaying the segmented 3D tubular structure using a color-coding to indicate the diameter.

10.   (Currently Amended) The method of claim 1, further comprising displaying the segmented 3D tubular structure in a manner ~~that mimics~~ substantially similar to a display of a result of a conventional angiogram.

11.   (Currently Amended) A computer-readable medium including executable instructions for performing a method, the method comprising:
        accessing stored volumetric (3D) imaging data of a subject;
        representing at least a portion of the 3D imaging data on a two dimensional (2D) screen;
        receiving user-input specifying a single location on the 2D screen;
        computing an initial centerline path of the tubular structure;
        obtaining segmented 3D tubular structure data by performing a segmentation that separates the 3D tubular structure data from other data in the 3D imaging data using the single location as an initial seed for performing the segmentation; and
        iteratively correcting the initial centerline path using the segmented 3D tubular structure data while the segmentation is iteratively performed.

12.   (Currently Amended) A computer-assisted method comprising:
        accessing stored volumetric (3D) imaging data of a subject using a computing device;
        initializing at least one parameter of a volumetric segmentation algorithm;
        iteratively performing a segmentation to separate 3D tubular structure data from other data in the 3D imaging data, the iteratively performing the segmentation including iterating the segmentation algorithm; and

reinitializing the at least one parameter between iterations of the segmentation algorithm, the reinitializing including adjusting the at least one parameter if needed to accommodate a local variation in the 3D tubular structure data.

13.   (Original)   The method of claim 12, further comprising:

receiving user input specifying a single location;

computing a central vessel axis (CVA) path using the single location as an initial seed; and

wherein the iteratively performing the segmentation includes using the CVA path to guide the segmentation.

14.   (Original)   The method of claim 12, further comprising:

automatically computing a single location to use as an initial seed;

computing a central vessel axis (CVA) path using the automatically computed single location as the initial seed; and

wherein the iteratively performing the segmentation includes using the CVA path to guide the segmentation.

15.   (Original)   The method of claim 14, in which the automatically computing the single location comprises using a stored atlas of 3D imaging information to obtain the single location.

16.   (Original)   The method of claim 12, further comprising masking data that is outside of the 3D tubular structure.

17.   (Original)   The method of claim 12, further comprising computing at least one estimated diameter of the segmented 3D tubular structure.

18.   (Original)   The method of claim 17, further comprising flagging at least one location of the segmented 3D tubular structure, the at least one location deemed to exhibit at least one of a stenosis or an aneurysm.

19.   (Original)   The method of claim 17, further comprising displaying the segmented 3D tubular structure using a color-coding to indicate the diameter.

20.   (Currently Amended) The method of claim 12, ~~fixther~~ further comprising displaying the segmented 3D tubular structure in a manner ~~that mimics~~ substantially similar to a display of a result of a conventional angiogram.

21.   (Currently Amended) A computer readable medium including executable instructions for performing a method, the method comprising:

        accessing stored volumetric (3D) imaging data of a subject;

        initializing at least one parameter of a volumetric segmentation algorithm;

        iteratively performing a segmentation to separate 3D tubular structure data from other data in the 3D imaging data, the iteratively performing the segmentation including iterating the segmentation algorithm; and

        reinitializing the at least one parameter between iterations of the segmentation algorithm, the reinitializing including adjusting the at least one parameter if needed to accommodate a local variation in the 3D tubular structure data.

22. – 43.   (Canceled)